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ABSTRACT

A Piagetian-based early childhood education program is compared with the Lavatelli program and the Weikart program. Interpretation and application of Piaget's theory are examined on a number of levels: conceptualization of curriculum objectives, methods of teaching, principles of teaching, and the role of the teacher. Lavatelli's program is commended for interpretation of Piaget's theory and Weikart's program for theory application. It is emphasized that a primary consideration in deriving curriculum goals from Piaget's theory should be that short-term cognitive goals should be set in the context of long-term goals, i.e., formal operations. (CS)

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Piaget-Based Curricula for Early Childhood Education: Three Different Approaches*

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INTRODUCTION

I. Need for Our Comparison and Contrast

Symposium is not a discussion of what is a good curriculum for children, but a discussion of what are the educational implications of Piaget's theory.

II. Points of Agreement

A. We all respect Piaget's theory and believe it has something important to contribute to the education of young children.

B. We all retain something of the methods of the child-development traditional nursery school.

C. We all criticize structured programs such as Distar which teach academic skills.

III. Points of Disagreement

A. Interpretation of Piaget's theory: We are closer to Lavatelli than to Weikart.

B. Application of Piaget's theory: We are closer to Weikart's group than to Lavatelli.

LAVATELLI'S PROGRAM

I. Interpretation of Piaget's Theory

A. We find much to admire in Lavatelli's (1970a) book on Piaget's theory. We specifically agree with the following educational implications which she drew:

1. Value of Play and Unstructured Program Experience

"Were all nursery school teachers and psychological investigators as alert as Piaget (1951) to the contribution of play to cognition, there might be more exploitation of its educational possibilities (1970a, p. 12) . . . Such concepts (as making 4 short blocks

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into a tower as high as one long block) are the basis of mathematical understanding and will provide a more solid footing for primary arithmetic than whatever is acquired when the teachers ask of four-year-olds, 'What comes after one?' to which question the children chorus an answer, 'Two comes after one' (1970a, p. 20). . . . And, implementation of a goal to develop intellectual competence would mean a day mostly unstructured in contrast to one in the pre-academic preschool where every minute of the child's time is involved in highly structured activity. . . . If we accept Piaget's theory that knowledge is acquired through action upon things and the relations which exist between them, then a major part of the preschool day should be reserved for free choice of activity (1970a, pp. 42-43)."

2. Futility of Teaching through Telling

". . .telling is not teaching, and that, as children use good, open-ended materials, their intelligence grows. . . . (1970a, p. 23). . . . Indeed, a teacher may exclaim in irritation at a pupil who gives the wrong answer, 'But you've just heard the opposite. We've just gone over the explanation. Weren't you listening?' Privately, the teacher may think the child either stupid or stubborn, but more likely the child has not acted upon the explanation to make it his own, and so equilibration has not occurred (1970a, p. 40). . . The teacher's role is to stimulate and guide, not to teach specific responses, not to tell the child the right answer, nor even to tell him that he is wrong. The teacher must have confidence in the child's ability to learn on his own (1970a, p. 48). . . . . Telling children is not teaching, as Piaget reminds us. Others do not convince us that we are wrong about our ideas; only we can convince ourselves. But the teacher who knows how to ask the right question at the right time can spark children's own search for answers and stimulate the child to make his own discoveries (1970a, p. 2)."

3. Importance of Mental Activity

"Activity of the learner is essential. It is only as the child is forced to go beyond perceptual decisions to act mentally on what he is assimilating that mental structures change and intelligence grows. Activity as used here is mental activity. . . .(1970a, p. 48)."

B. However, we also find some serious faults with Lavatelli's interpretation of Piaget's theory. These flaws led her to what we consider to be misapplications of the theory.

1. Lavatelli fails to make the basic distinction Piaget made between physical knowledge and logico-mathematical knowledge.

   a. Thus, more than half the theory is missed.

   b. Thus, application focuses upon the development of logico-mathematical knowledge outside the necessary context of physical knowledge and experience.

2. Lavatelli almost understood the operative aspect of Piaget's theory, but the following are examples of the type of serious errors she made:

   a. Although she says, "Activity as used here is mental activity," she contradicts this by using the term "operation" to refer to specific external actions and knowledge (such as "Establishing equivalence of sets by a one-to-one correspondence after physical correspondence has been destroyed (1970b, p. 43)" and "Establishing equivalence between two quantities of liquid by reversing a physical operation (1970b, p. 47)").

   b. Lavatelli attempts to promote abstraction of logico-mathematical knowledge through concrete manipulation of figurative materials at the direction of the teacher.

   c. She states that children "eventually discover that quantity is conserved even with a change in the shape of the container (1970a, p. 21)." This implies that conservation is outside the individual somewhere to be found rather than to be deduced as a result of the grouping of operations. It contradicts her earlier statement that the child must convince himself with his own logic.

   d. Lavatelli talks about making children "logical thinkers (1970a, p. 26)" and invokes social reinforcement as a technique by which children can become more logical thinkers. We see this as contradicting Piaget's theory about how logico-mathematical structures develop.

II. Conceptualization of Curriculum Objectives

A. Language and Intellectual Competence

Although Lavatelli spoke sympathetically about the developmentalists' argument for the education of the whole child (1970a, p. 18), her objectives were presented in terms of "language and intellectual competence (1970a, p. 53)."

This is in contrast to our emphasis on the development of the entire personality, with primary emphasis upon socioemotional development.

B. Concrete Operations

Lavatelli attempted to make children concrete operational.

This is in contrast to our longer-range goal of formal operations and our view that the best way to help children become formal operational is to encourage very active use of preoperational intelligence.

III. Methods of Teaching

A. General Approach

1. Teach Piaget's tasks.

Although Lavatelli mentioned equilibration as very important for the child's development of the operations he needs to succeed on the tasks (1970a, pp. 36-41), her program consists of teaching Piaget's tasks.

We do not teach Piaget's tasks, but view them simply as useful diagnostic tools. Teaching the tasks is a mistake for two reasons: a) It is like fertilizing soil samples instead of the entire field, and b) It assumes that the various cognitive areas (such as classification, number, and seriation) can develop separately. In reality, as Piaget insists, all operations develop together.

2. Combine structured training sessions with traditional child development program.

Despite Lavatelli's praise for the cognitive value of play, she presented her program in terms of separate training sessions conducted outside the classroom.

We do not directly attempt to teach concrete operations and therefore have no place for structured (or unstructured) training sessions outside the classroom.

Our program is entirely unstructured, with the option, however, for a teacher to conduct some group activities (storytelling, group games, planning time, evaluation at the end of a day, rhythmics, etc.). We place heavy emphasis upon the importance of the natural social context for children's cognitive development. We believe that children will develop the ability to coordinate their thinking by coordinating different points of view (an by failing to coordinate different points of view).

3. Use commercial kit of materials.

In contrast with Lavatelli's use of a commercial package, we use household junk and other free or inexpensive materials for the bulk of our program. Although we find such commercial materials as puzzles, blocks, and transportation toys useful, we feel that any kit limits what a child can learn.

B. Principles of Teaching

1. Sequence the content by following the developmental sequence.

Lavatelli notes that her program "is planned with developmental sequence in mind (1970b, p. 5)." She outlines "logical processes as they appear developmentally in early childhood in each of three areas--Classification, Space, and Number and Seriation (1970a, p. 44)."

Piaget has shown that children do generally master the tasks in the order Lavatelli gives (though we would quarrel with minor points in her description of the sequences). However, the existence of a developmental sequence on the tasks does not imply a sequence of instruction. In seriation, for example, the fact that children show a Stage II in which they depend on the figurative "good form" does not in the least imply that one should teach children to depend on figurative materials.

2. Direct the child's actions.

Despite Lavatelli's insistence on the importance of self-activity for the child's development of logic, and despite her statement that "The teacher must have confidence in the child's ability to learn on his own (1970a, p. 48)," she has the teacher direct the child's

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actions. For example, in a classification activity, Lavatelli's teacher tells the child to "take the two rings and put them on the table so that the green square is not inside either ring. . . .Now, I'd like you to pick up one of the rings and place it so that the green square is inside the ring (1970b, p. 30)." Throughout the lessons, we find the initiative resting solely with the teacher.

External direction of a child's action prevents the spontaneous mental action which Piaget finds in child-initiated actions. Lavatelli seems to think that by putting the child through physical actions, the mental actions will automatically follow. We see her activities as primarily physical action without mental action. In our curriculum, the teacher does not direct the child's actions, but, instead, does everything she can think of to encourage the child's initiative.

3. Get the child to give the correct answer.

We find Lavatelli's teacher most unaccepting of the preoperational child's "wrong" answers. Despite Lavatelli's insistence that the teacher should "not correct wrong answers (1970b, pp. 2, 23)," it seems to us that this is precisely what she does. Verbal and nonverbal procedures for what to do when a child says or does the wrong thing are carefully outlined with the objective of getting the child to correct himself. Lavatelli recommends a variety of verbal methods. She suggests asking the child leading questions; for example, if a child chooses a figure other than the green square in the classification task, the teacher should ask, "Is that a green square?" with emphasis on the word for the property the child has missed (1970b, p. 30). Lavatelli suggests having the child repeat after the teacher; for example, in a classification activity, the teacher says, "Show me a red bead. Good. Now tell me what it is. Say, 'it's a red bead.' (1970b, p. 10)." In other instances, Lavatelli says the teacher should give the child a verbal rule; for example, in a number, measurement and space activity, the teacher is told to "Alternately add and take away (from a group of cubes); repeat a verbal formula each time, 'Adding makes things have more; taking one away makes things have less' (1970b, p. 44)." Throughout, Lavatelli's teacher is exhorted to "remind the child . . . ," "recall for him. . . ," and to "call attention to . . . . ."

In addition to these less direct verbal communications to the child that he is wrong, Lavatelli also recommends more direct demonstrations of actions she wants

the child to perform. For example, in a classification task, she has children make as many different pairs as they can with three types of cars. If the children do not use a system of starting with one car and combining that car with itself and then with the other two, then starting with the next car, etc., she has the teacher "say, 'Would it help if we used a system like this?' and proceed to demonstrate the foregoing system (1970b, p. 35)."

Another general method Lavatelli uses to help children get the right answer is to provide figurative materials. For example, she recommends teaching classification by having children arrange pictures of objects of two colors and two sizes into a 2 X 2 matrix. She also recommends figurative demonstrations. For example, if a child does not conserve, she suggests that the teacher "Try gradual transformation of the visual correspondence (1970b, p. 40)."

Lavatelli also has her teacher give other action strategies to children. For example, in a liquid conservation activity, the teacher has "the children check by pouring (1970b, p. 47)" to see if there is as much to drink in two 4-oz. containers as in one 8-oz. container.

In short, we find Lavatelli's teacher appears much like a Distar teacher. This lack of acceptance of the child's preoperational thinking runs strongly counter to our belief that the teacher should respect the child's thinking and not try to force him to conform to adult logic. Such an effort is futile and harmful from our point of view because if we want him to reach formal operations, the child must go through many stages of being wrong.

4. Reinforce the right answer.

The Lavatelli teacher reinforces correct answers.

In our curriculum, social reinforcement of the child's correct logic and language is considered undesirable because our aim is not to produce correct answers. Furthermore, reinforcement is unnecessary because when correct logic is constructed, it is a permanent acquisition anyway.

C. Role of the Teacher

1. Problem-maker (1970a, p. 102)

The Lavatelli teacher gives problems for children to solve.

In our curriculum, in contrast, the teacher creates an environment which encourages children to create their own problems.

2. Director of child's actions

The Lavatelli teacher directs children's actions.

In our curriculum, in contrast, the teacher encourages the child's initiative and spontaneous actions.

3. Modeller of logical thought and correct language

The Lavatelli teacher models the correct responses.

In our curriculum, such modelling is considered futile and harmful because the child must go through many stages of being wrong and must construct his own logic and language.

4. Reinforcer

See Teaching Principle 4, above.

WEIKART, ROGERS, ADCOCK, AND MCCLELLAND'S PROGRAM

I. Interpretation of Piaget's Theory

A. Physical Knowledge

The Weikart group fails to make the basic distinction Piaget made between physical knowledge and logico-mathematical knowledge. See our comments on Lavatelli's failure to make this distinction, p. 3, above.

B. Representation

The Weikart group's total curriculum emphasis on representational ability is a focus on one small part of the child's developing intelligence. Piaget's concern in the development of logico-mathematical aspects of intelligence is reflective abstraction, not representation.

The Weikart group not only overemphasized a small part of Piaget's theory but also confused Piaget's developmental stages with levels of representation. In The Cognitively Oriented Curriculum (Weikart, et al, 1971), development from the sensory-motor to preoperational level is linked to the index; development to concrete operations is linked with the symbol; and development to formal operations is linked with the sign (pp. 5, 35). They reduced development to mere learning to manipulate words and mental images, and say, "The ultimate level in Piaget's outline of levels of representation is the sign level, or representation through (written) words (p. 5)" . . . . and "a certain level of mental representation has to be reached in order to accumulate the fund of 'mental pictures' which serve as the initial referents for the development of language (p. 6)."

In Piaget's theory, neither the symbol nor the sign is particularly important to the child's attainment of concrete or formal operations. Actually, the symbol and sign both appear at about the age of 18-24 months and develop together. Moreover, according to Piaget's theory, thinking cannot be reduced to the manipulation of mental images or words.

The focus on representation leads the Weikart group to the completely un-Piagetian definition of "operations" as "representational acts (p. 4)." Moreover, they talk about "levels of operation (p. 35)' or "modes of operation (p. 89)" as being motoric and verbal. They say, The child usually operates on the motoric level before he operates on the verbal level (p. 89)."

C. Logico-Mathematical Knowledge

The Weikart group overlooked the central meaning of Piaget's description of the development of classification and seriation abilities. Piaget emphasizes the child's active mental coordinations which indicate the existence of a general cognitive structure. In contrast, the Weikart group views classification and seriation in the following ways:

Classification: They view classification as sorting behavior that progresses from "relational" to "descriptive" and "generic". For Piaget, on the other hand, the heart of classification is the coordination of intension and extension.

Seriation: They view seriation as ordering behavior (i.e., spatially arranging objects) that progresses from the ability to order three objects to four, five, six, . . . ten objects. For Piaget, on the other hand, the heart of seriation is the deductive coordination of relations, including relative differences.

D. Spatio-Temporal Knowledge

The Weikart group overlooked the essence of Piaget's theory and reduced spatio-temporal relations to body awareness and words such as "around/through" and "first/last." For Piaget, the essence of spatio-temporal knowledge is the grouping of spatial and temporal operations.

In short, the Weikart groups theory of development is not Piaget's, and the only thing we recognize is Piaget's vocabulary.

II. Conceptualization of Curriculum Objectives

A. Development of Representational Ability

As a result of their theory (not Piaget's) that operations are "representational acts (p. 4)," Weikart's group put an inordinate amount of effort into getting children to do things at the index level and then at the symbol level* and to understand a long list of words such as "in/out" and "first/next/last" (pp. 93-145). We have nothing against encouraging children's development of representational ability, but the preoccupation with words in this curriculum does seem to be at the expense of operative thinking.

B. Development of Classification Ability

For the Weikart group the objective in classification is to get children to progress from "relational" sorting to "descriptive" and then "generic" sorting (pp. 7, 94-105). This interpretation is based on Sigel's (1970) work, rather than Piaget's. For Piaget, what is important in classification is the coordination of intension and extension. Furthermore, whatever intensive property the child chooses is correct, and there is no developmental difference between "descriptive" and "generic" sorting.

C. Development of Seriation Ability

For the Weikart group the objective in seriation is to get children to order four sizes, four quantities, and three qualities (pp. 7, 106-118). For Piaget, on the other hand, the ability to order objects is beside the point, particularly when sizes and a figurative "good form" are involved. The important activity for the child is to introduce relationships (e.g., differences and similarities and relations) between objects and deductively coordinate these relationships, including that of relative differences.

D. Development of Spatial Reasoning

For the Weikart group, spatial reasoning is reduced to spatial relationships, and the objectives are a) body awareness, b) words related to positions (e.g., "on/off"), and c) words related to directions (e.g., "up/down") (pp. 7, 119-134). These objectives seem no different from those found in a traditional child-development cur-

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*Every "conceptual focus" in this curriculum is repeated, once at the index level and again at the symbol level. Piaget would have particular difficulty in figuring out what is meant by classifying and seriating at the index level (pp. 93, 99, 104, 107, 112-113, 116-117).

riculum. For Piaget, in contrast, the important development during the preoperational period is the structuring of space at the representational level which leads to the "grouping" of spatial operations.

E. Development of Temporal Reasoning

The Weikart group reduces temporal reasoning to temporal relationships, and the objectives are words related to a) the "beginning and end of time intervals," b) the "ordering of events," and c) "different lengths of time within time periods" (pp. 7, 135-145). For Piaget, in contrast, the important development during the preoperational period is the structuring of time and the "grouping" of temporal operations.

In short, the Weikart group's conceptualization of objectives is not related to Piaget's theory in any way except for the headings "classification," "seriation," "spatial relations," and "temporal relations." We have nothing against many of their curriculum goals except for the claim that the goals were derived from Piaget's theory.

III. Methods of Teaching

A. General Approach

The traditional child-development approach is advocated, including sociodramatic play, field trips, stories, art, blocks, puzzles, and rhythm activities.

B. Principles of Teaching

We gleaned the following five principles of teaching from The Cognitively Oriented Curriculum.

1. Integrate "levels of representation" with "levels of operation."

This statement makes no sense from the point of view of Piaget's theory, but we will try to interpret it anyway. By "levels of representation," the Weikart group seems to mean thinking in images or words. In terms of what the teacher does in the classroom, the integration seems to say merely that the teacher has the children move and talk, while she talks, with the goal of learning a specific concept. We cannot see how this principle helps the teacher in any way. In fact, if we were teachers trying to implement this curriculum, we honestly would not know what to do with the triangle in Figure 2 (p. 14). (It seems to us that this principle is simply used to justify activities with children which are actually arbitrarily selected.)

2. Sequence what the child is to learn.

See p. 5 for our comments on this principle.

3. Focus on only one concept at a time in any given activity.

The Weikart group says, "In any given activity the teacher deals with only one concept at a time. If she sees the activity as a good way of working toward other concepts, she uses it again at another time and emphasizes a different goal rather than cram every possible goal into a single activity (p. 15)."

In this regard, they also describe three stages a teacher goes through in learning to apply this principle. During the first stage of "learning the conceptual framework and terminology, . . . she is primarily concerned with whether or not a particular activity fits the stated goals. . . .She discovers, for example, that feeding classroom pets, a traditional preschool chore, involves elements of temporal relations (time intervals, time sequences, duration of time, etc.). . . ."

"This gradual recognition of the conceptual framework of the curriculum in familiar activities leads to the second stage, where the teacher attaches all possible cognitive elements of the curriculum to the particular activity in use. For example, if the activity is baking a cake, the teacher would recognize that this involves temporal relations. . .; seriation. . .; classification. . .; and spatial relations. . . . Gradually, the teacher begins to see that this method is too complicated for teaching concepts to young children who need special assistance."

"With this realization the teacher begins to operate at the third stage. Now she selects specific activities that relate primarily to one specific curriculum goal. Other concepts may be, and indeed are, closely involved, but the primary concept to be taught is kept as the main focus. Instead of one activity employed to teach many cognitive components, many activities are developed to reach one cognitive goal (pp. 70-71)."

The teacher in our curriculum is much more like the teacher at the second stage the Weikart group describes. According to Piaget, learning is a much messier process than assumed by anyone trying to program it. Insisting on one predetermined goal at a time stifles children's curiosity and initiative and prevents them from learning.

4. Bombard the child with language.

The Weikart group assumes that the preoperational child "initially does not respond to verbal directions, is slow to respond to questions and has a very limited vocabulary (p. 54)." They thus suggest "strong language input tied to (the child's) experience (p. 54)." They further explain, "Through verbal stimulation, the child is exposed to a wide variety of language patterns. The teacher explains the child's actions, her personal actions, and social interactions that have gained the child's attention (p. 55)." The Weikart group also recommends expansion and questioning at the next stage of development (p. 55).

Maccoby and Zellner (1970) quote the Weikart program on language as follows:

"We ask the teachers to give the children practice in labels, and also (to) emphasize the relational words 'same as,' 'third,' and so on. We find that the teachers tend to simplify their language too much--they'll say, 'Get in line,' and we want them to say, 'If everyone is quiet, then we will get in line.' We ask the teachers to present choices verbally: 'There are two ways we can go to the coat closet--straight across the room or around the table by the wall. Which way shall we go?' We ask them to avoid giving directions with body English. We tell the child what he's doing while he's doing it, and ask him to tell us what he's doing. We might even stop a child when he's halfway down a slide and ask him what he's doing. Then we tell him what he's done, and what he's going to do, and get him to produce these constructions before we move on to the next step (p. 46)."

The preoperational child described as so limited in language ability does not correspond to many of the preoperational children we know. (We wonder whether the Weikart curriculum is designed for retarded children.) We would argue, however, against the use of verbal bombardment even for retarded children or children of poverty. Recent research by psycholinguists (see, for example, Brown, 1973) does not support the idea that language development occurs through exposure to language patterns or to a barrage of words. Although language development is still somewhat of a mystery, Cazden's (1972) research suggests that verbal extension of the ideas expressed by a child may be of more use than simple expansion

of his grammatical syntax. Therefore, we certainly do not object to the presence of rich language in the preschool classroom. What we do object to is language which is unnecessary for meaningful communication (such as telling the child what he is doing), language that interrupts the child's thinking (such as stopping the child when he is halfway down the slide to ask him to tell the teacher what he is doing), and language which prevents the child from pursuing his own problems (such as the activities described in the Weikart guide).

5. Reinforce concepts.

Throughout the book by the Weikart group, the word "reinforce" appears over and over. We have already noted (on p. 7) in connection with our discussion of the Lavatelli program that the notion of using reinforcement for promoting learning and development reflects a psychology which is foreign to Piaget's theory.

C. Points of Philosophical Agreement

In spite of the above principles of teaching which go strongly counter to Piaget's theory, we found in The Cognitively Oriented Curriculum several passages that seemed to be to some extent in harmony with Piaget's views:

1. Education must be active.

Weikart says, ". . .children must be active participants in learning and must have the opportunity to test both incorrect and correct answers through a multiplicity of experiences within a highly varied environment (p. IX)."

Our only quarrel with this statement is that children should not be considered "participants in learning." Rather, they are the learners, and do not merely participate in learning.

2. The role of language is overrated in most educational programs.

The Weikart group says that ". . .language is not taught directly (p. 53)". . . .and "Language cannot be depended upon to teach a concept (p. 54)."

Despite this disclaimer, it seems to us that the Weikart program does overemphasize words, both in its specific objectives and in its teaching methods.

3. One should not teach for the right answer.

The Weikart group says, "Perhaps the most damaging is the convergent question, for which there is only one right answer. The message seems to be, 'Miss that answer and you are really dumb' (pp 55-56)."

Despite this disclaimer, Weikart's group insists on teaching for one predetermined goal at a time, and the word "reinforce" appears frequently throughout the book. With a long list of specific goals such as "same/not the same," "big/little," "on/off," and "start/stop," it is hard to see how a child can be encouraged to produce many different correct answers.

4. One cannot specify the details of a curriculum for all children or all teachers.

The Weikart group says that ". . .teachers must actively participate in constructing the specific expression of the curriculum for their own classroom and group of children (p.). . . . Rejected completely is the utilization of curriculum 'scripts' of what to think, what to say, and how to put a particular goal into operation (p. 70)."

IV. Concluding Remarks

Weikart, in the introduction to his curriculum, acknowledges that he "alters some of the (Piagetian) terms such as 'operations' (p. IX)." He implies that he finds the theory inadequate to "do the job" in "a practical classroom program." Therefore, he argues that theory "may be altered to meet differing situations when it seems advisable," even though he admits that "This approach to theory leads into trouble very easily, because it permits a flexibility which may circumvent the theory." Weikart concludes that "while there is a growing congregation of 'high church' Piagetians in preschool education, I would classify this curriculum as the product of 'store front' Piagetian theory utilization."

If Piaget's theory must be altered to fit the developmental needs of children in real life, something must be seriously wrong with the theory. We feel, however, that the problem lies in the inadequate assimilation of Piaget's theory by the Weikart group, and that their distortion of Piaget's theory leaves it unrecognizable. Their theory should be labelled just that: theory. Piaget should not be blamed for it.

From our point of view, the salvation of the Weikart program is that they don't derive all their practice from their theory. Because their theory doesn't provide any rationale for including or not including field trips, blocks, art, puzzles, rhythm activities, they retain much of what we find good in the

child development programs. It seems to us that in applying a "store front" version of their (not Piaget's) theory, they come closer to the application of a "high church" version of Piaget's theory.

V. Epilogue

It seems to us that the first considerations in deriving curriculum goals from Piaget's theory must be the following:

A. Short-term cognitive goals must be set in the context of long-term goals, i.e., formal operations.

B. For Piaget, the goal of education is the development of the entire personality, including moral and social development. Although the Weikart group states that most observers to well-run Cognitively Oriented Curriculum classrooms say that the children's emotional and social needs are being met (p. x), moral and social development are not fostered by merely meeting children's emotional and social needs. The short-terms goals in this realm must also be set in the context of long-term goals. For Piaget, the goal of education is nothing less than the development of the truly autonomous personality able to live in harmony with other personalities.

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